



Modeling Sea-Floor Spreading

Problem

How does sea-floor spreading add material to the ocean floor?

Materials

scissors
metric ruler
2 sheets of unlined paper
colored marker

Procedure   Review the safety guidelines in Appendix A.

1. Draw stripes across one sheet of paper, parallel to the short sides of the paper. The stripes should vary in spacing and thickness.
2. Fold the paper in half lengthwise and write the word “Start” at the top of both halves of the paper. Using the scissors, carefully cut the paper in half along the fold line to form two strips.
3. Lightly fold the second sheet of paper into eighths. Then unfold it, leaving creases in the paper. Fold this sheet in half lengthwise.

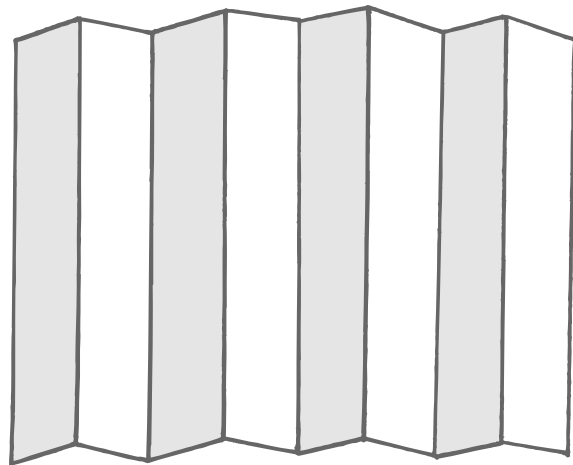
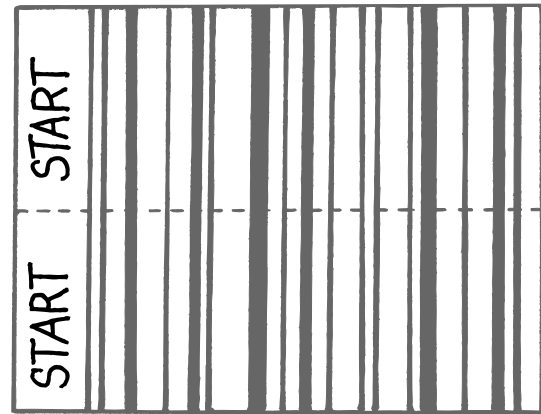


Plate Tectonics ▪ Skills Lab**Modeling Sea-Floor Spreading** *(continued)*

4. Starting at the fold, draw lines 5.5 cm long on the middle crease and the two creases closest to the ends of the paper.
5. Now carefully cut along the lines you drew. Unfold the paper. There should be three slits in the center of the paper.
6. Put the two striped strips of paper together so their Start labels touch one another. Insert the Start ends of the strips up through the center slit, and then pull them toward the side slits.
7. Insert the ends of the strips into the side slits. Pull the ends of the strips, and watch what happens at the center slit.
8. Practice pulling the strips through the slits until you can make the two strips come up and go down at the same time.

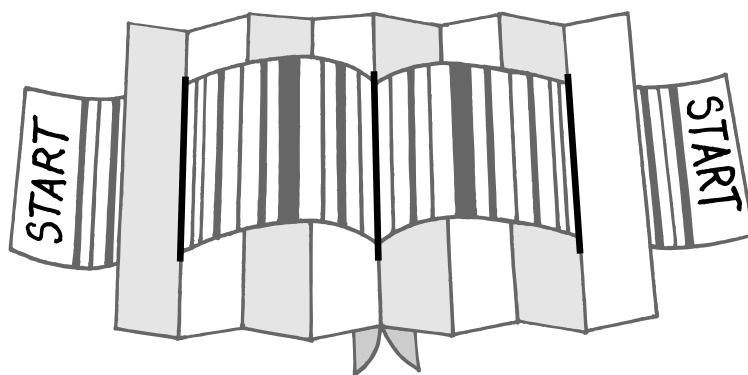
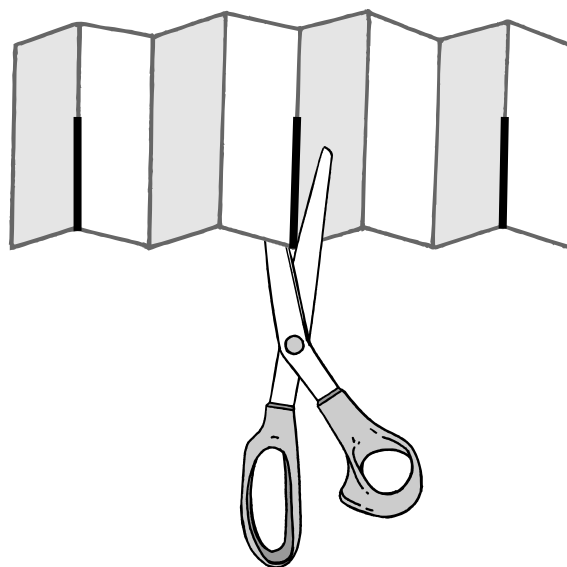
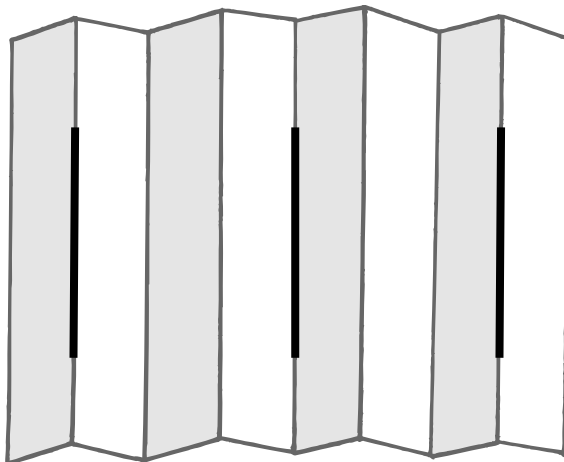


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Analyze and Conclude

Write your answers in the spaces provided.

1. What feature of the ocean floor does the center slit stand for? What prominent feature of the ocean floor is missing from the model at this point?

2. What do the side slits stand for? What does the space under the paper stand for?

3. How does the ocean floor as shown by the part of the strip close to the center slit differ from the ocean floor as shown by the part near a side slit? How does this difference affect the depth of the ocean?

4. What do the stripes on the strips stand for? Why is it important that your model have an identical pattern of stripes on both sides of the center slit?

Plate Tectonics ▪ *Skills Lab*

Modeling Sea-Floor Spreading *(continued)*

5. Explain how differences in density and temperature provide some of the force needed to move the strips in your model.

6. **Think About It** Use your own words to describe the process of sea-floor spreading. What parts of the process were not shown by your model?

More to Explore

Imagine that so much molten rock erupted from the mid-ocean ridge that an island formed there. How could you modify your model to show this island? How could you show what would happen to it over a long period of time?